



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,015	05/15/2001	Andrew Chang	1988.0060005	8008

26111 7590 10/28/2004

STERNE, KESSLER, GOLDSTEIN & FOX PLLC  
1100 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER
----------

PIZARRO, RICARDO M

ART UNIT	PAPER NUMBER
----------	--------------

2661

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/855,015

Applicant(s)

CHANG ET AL.

Examiner

Ricardo Pizarro

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-14 is/are rejected.
- 7) ☒ Claim(s) 5 and 16-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/15/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claims 5, 16-19 are objected to because of the following informalities and it is suggested to applicant:

In claim 5 line 3 insert "each" before –said–.

In claim 16 line 2 delete "the", in line 3 delete "the", in line 5 delete "the", in line u delete "the".

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1–3, 5 , 8 are rejected under 35 U.S.C. 102(a) as being anticipated by Okazawa. US patent No. 6,035,414 ( Okazawa et al) discloses a crossbar switch in an information processing system comprising a switching fabric ( crossbar switch) comprising: a plurality of cross points ( switches .i.e. LSI col 1 line 58) that process multiple stripes of serial data; and wherein each cross point includes a plurality of port slices ( col 1 line 61) , as in claims 1 and 8; wherein said plurality of cross points comprise five cross points ( Five LSI switches , col 4 lines 25-26) , as in claim 2; wherein each cross point comprises: a plurality of ports ( each LSI switch

Art Unit: 2661

comprises 16 ports, col 9 line 34) ; and a plurality of port slices coupled respectively to said ports ( col 9 line 35) , as in claim 3; wherein each port slice further comprises: a multiplexer coupled to said FIFOs and to said FIFO read arbitrator; and a dispatcher coupled to an output of said multiplexer, as in claim 5.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4 , 7 , 9 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okazawa in view of Lomelino.

Okazawa did not specifically disclose each port slice comprising a plurality of FIFOs coupled to other ones of said port slices; and a FIFO read arbitrator coupled to each FIFO, wherein said FIFO read arbitrator arbitrates read requests sent by said FIFOs, as in claims 4, 9, and 13 ; wherein each cross point comprises eight ports and eight port slices, as in claims 7 and 12.

However US patent no. 5,867,675 ( Lomelino et al) discloses an apparatus for combining data streams, comprising a port slice including a plurality of FIFOs coupled to other ones of said port slices ( FIFOs 32, 34 , 36 in Fig. 2); and a FIFO read arbitrator coupled to said FIFOs ( FiFo

Art Unit: 2661

arbitrator 38 in Fig. 2), wherein said FIFO read arbitrator arbitrates read requests sent by said FIFOs, as in claims 4 and 9.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention that the number of ports in each crosspoint is a design choice and to provide the arbiter as disclosed by Lomelino to the system disclosed by Okazawa with the motivation of obtaining a switch capable of transferring data in a more efficient manner.

4. Claims 6 and 11, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okazawa in view of Wicki.

Okazawa did not specifically disclose each port slice comprising an accumulator that writes received data to an appropriate FIFO in a different port slice, as in claims 6, 11 and 14.

US patent No. 5,838,684 (Wicki et al) discloses a cross bar switch wherein each port slice comprises: an accumulator that writes received data to an appropriate FIFO in a different port slice (128 in Fig. 1 and 3B, accumulator 129 in Fig 1, col 5 lines 65-67, col 6 lines 1-7), as in claims 6 and 11.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to provide the accumulator means as disclosed by Wicki to the system disclosed by Okazawa with the motivation of obtaining a switch wherein low latency is achieved by reducing operations performed in each packet.

***Allowable Subject Matter***

5. Claim 15 is allowed.

6. Claims 5, 16-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Please also notice objection to claims under 37 CFR 1.75

***Conclusion***

**7. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 872-9306

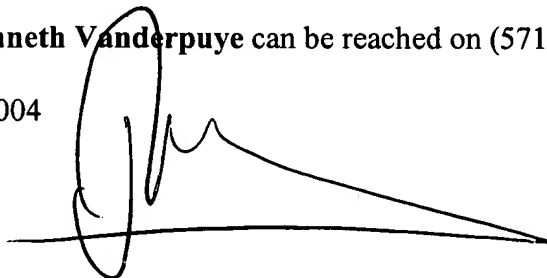
(for formal communications intended for entry, for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to 220 South 20<sup>th</sup> Street, Crystal Plaza Two, Lobby, Room 1B03, Arlington, Va 22202 (Customer Window).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ricardo Pizarro** whose telephone number is (571) 272-3077. The examiner can normally be reached on Monday-Friday from 9:00 AM to 5:30 PM. The fax number for this Group is (703) 872-9306.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Kenneth Vanderpuye** can be reached on (571) 272-3078.

10/20/2004

A handwritten signature in black ink, appearing to read 'Kenneth Vanderpuye', is written over a horizontal line. The signature is stylized with a large loop at the beginning and a long, sweeping tail.